Assistant Engineer, Tug, Class II **Bmk. No. C-29**
XH-4742-06

MAJOR DUTIES

Serves as Assistant Engineer of a diesel-powered Class II tug (under 65'), usually engaged in tending and supplying floating plant. Vessels of this type typically operate rivers, channels or harbor areas, where they tend a variety of floating plant engaged in harbor/channel/waterway maintenance.

1. Incumbent is in complete charge of one shift of the engine room. Operates engines and other machinery such as bilge, fire and fuel pumps, high pressure air compressors, air tanks, hot water heating systems, and the electrical system. Is responsible for having engine in readiness for accomplishing directions received from the Master.

2. Tends and services all vessel equipment and maintains the engine room in a clean and orderly condition. Inspects electrical wiring, lights and motors, and makes repairs or replacements where needed. Cleans bilges. Inspects and tests air and fuel tanks, gauges and safety valves. Repacks stuffing box on propeller shaft and aligns shaft. Assures compliance with safety requirements in maintenance as well as operations of all plant. Furnishes information as to the status of work and compiles workload data pertinent to the impact of repairs on operations plans and requirements. Notifies the Chief Engineer of necessary major repairs to engines. Maintains and secures all tools, supplies, and equipment issued to the engine room department.

Performs other duties as assigned.

NOTE: This job is required only when the tug operates on a two-shift basis.

SKILLS AND KNOWLEDGES

--Must hold a U.S. Coast Guard Engineer's license commensurate with the type engine room machinery and equipment, horsepower, and characteristics of the vessel to which assigned.

--A knowledge of the vessel diesel, electric, mechanical, hydraulic and/or electronic equipment, systems, and auxiliary plant and machinery, and the related knowledge and skill requirements to diagnose problems and malfunctions and supervise and participate in the repair, replacement, and modification of such machinery, engines, and systems. Applies the knowledge to understand how such equipment and systems operate individually or in combination and the ability to plan and lay out repair, replacement, maintenance, and modification plans and requirements ranging from those of a minor nature to those of extreme complexity. Applies a knowledge of the fuel, water, and waste treatments associated with the various equipment and systems.

--Knowledge and ability to interpret and apply working drawings, sketches, diagrams, blueprints, and various information reflected in technical manuals. Applies a knowledge of advanced shop math to accomplish computations pertinent to electricity and electronics, electronic equipment, air conditioning and heating, refrigeration and mechanical dimensions, tolerances and voltages.

Applies skill and knowledge in the use of a variety of testing instruments including refrigeration gages, ammeters, ohmmeters, and temperature testers in diagnosing problems and malfunctions, and a variety of measuring devices including feeler gages, vernier calipers, inside and outside calipers and micrometers, thread gages, dial indicators, screw pitch gages, protractors, dividers, composers, steel squares, clinometers, etc. Applies skill to accomplish work to tolerances of .001 inch.

--Knowledge of the uses of lathes, shapers, and milling machines to understand the processes necessary for certain repairs. Knowledge and skill in the use of drill press, honing equipment, grinders, jig borers, jig grinders, power hacksaws, electric and acetylene welding and flame cutting processes, and a variety of electric and hand tools common to the trades involved. Applies a knowledge of the characteristics of a variety of metals and alloys such as stainless, monel, brass, bronze, babbit, silver, aluminum, mild and hardened steels, etc.

RESPONSIBILITY

Works under the general supervision of the Chief Engineer. Receives oral and written assignments from the Chief Engineer including blueprints, drawings, and charts. Plans and accomplishes work in accordance with standard procedures, directives, regulations, U.S. Coast Guard regulations, and overall marine requirements. Work is subject to spot checks for proficiency of performance as determined from continuity of operation. Engine room facilities are subject to periodic inspections by U.S. Coast Guard for compliance with marine safety regulations.

WORKING CONDITIONS

Work is performed inside and outside subjecting employee to varying climatic conditions, abnormal noises, temperature, danger of burns, irritation from grease and oils, bruises, strains, danger from attending moving machinery, falling overboard, electrical shock, falls on slippery decks or steep stairways, possible drowning, and crankcase explosion.

PHYSICAL EFFORT

Incumbent performs work from ladders, scaffolding, and platforms and where the parts, equipment, or systems are in hard-to-reach places. Work requires the incumbent to stand, stoop, bend, kneel, crawl, climb, and work in a tiring and uncomfortable position. Frequently lifts, carries, and sets up parts and equipment that weighs up to 40 pounds.

Bmk. No. C-29

ASSISTANT ENGINEER, TUG, CLASS II
XH-4742-06
EVALUATION STATEMENT

1. REFERENCES:

a. OPM, JGS, Utility Systems Repairer-Operator Series, WG-4742, May 1974.

b. U.S. Army Corps of Engineers Ladder Diagram, 1953

2. SERIES AND TITLE DETERMINATION:

Position serves Assistant Engineer on a Class II tug (under 65') diesel-powered tugboat. Duties require a knowledge of the vessel diesel, electric, mechanical, hydraulic and/or electronic equipment, systems, and auxiliary plant and machinery, and the related knowledge and skill requirements to diagnose problems and malfunctions and supervise and participate in the repair, replacement, and modification of such machinery, engines, and systems. Employee must hold a U.S. Coast Guard Engineer's license commensurate with the type engine room machinery and equipment, horsepower, and characteristics of the vessel to which assigned. Position is allocated to the WG-4742 series. Position is titled Assistant Engineer, Tug, Class II, in keeping with prevailing maritime titling practices. The absence of the requirement for an Engineer's license precludes classification as Assistant Engineer, Towboat.

3. GRADE DETERMINATION:

The Assistant Engineer is one grade lower than the Chief Engineer, XH-07, in keeping with accepted maritime practice.

NOTES ON USING THIS BENCHMARK

The existence of each of the following elements represents a basis for grade increases:

(1) The significantly greater size, horsepower, volume and complexity of machinery, equipment, electrical/electronic systems requires significantly greater diagnostic, repair, modification and maintenance skills, knowledges and work requirements. However, the vessel characteristics do not meet the level of the Tug, Class I.

(3) Supervisory/Crew Chief responsibilities are significantly greater than that required for the Chief Engineer position.